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PROBLEMS.

119. SELECTED, BY DR. WM. HILLHOUSE, NEW HAVEN, CONN.—If from one of the extremities,  $B$ , of the diameter,  $AB$ , of a given circle, any chord,  $BD$ , be drawn, and from the other extremity,  $A$ , and the centre,  $C$ , two lines,  $AE$ ,  $CE$ , be drawn to any point,  $E$ , in the circumference, cutting said chord in the points  $F$  and  $G$ ; then,  $GF : GD :: (BF)^2 : (BA)^2$ .

Required the demonstration.

120. BY DR. N. R. OLIVER, LONDON ONTARIO.—Given

$$\left\{ \begin{array}{l} (x^2 + xy + y^2)^{\frac{1}{x+y}} = m, \\ (x^2 - xy + y^2)^{\frac{1}{x-y}} = n. \end{array} \right\} \quad \text{To find } x \text{ and } y.$$

121 BY PROF. A HALL.—In a spherical triangle are given the sum of each angle and the side opposite, to solve the triangle.

121. BY PROF. H. T. J. LUDWICK.—It has been cloudy during the last seven days; what is the probability that it will be cloudy to-morrow?

122. BY DR. H. EGGERS, MILWAUKEE, WISCONSIN.—To inscribe a square in a given quadrilateral.

123. BY MARCUS BAKER, U. S. COAST SURVEY.—Solve the equation  $\sqrt[n]{x} = a$  and determine what values of  $a$  give real roots.

124. BY PROF. W. W. HENDRICKSON U. S. N. ACADEMY.—A radius is drawn in the circle  $x^2 + y^2 = a^2$  and from its extremity an ordinate. From the foot of the ordinate a line is drawn perpendicular to the radius. Find and discuss the envelop of this last line.

BOOK NOTICE.

*Principles of Approximate Computations*, By Joseph J. Skinner, C. E., Instructor in mathematics in the Sheffield Scientific School of Yale College. Henry Holt & Co. New York.

This handsome little book will well repay a perusal by any one who has calculations to make in which he deals with quantities whose approximate values only are known.

The chapter treating of logarithms and trigonometric functions is especially worthy of notice and should be read by every student of trigonometry.

*Correction.* On page 93, lines 11 and 12, invert the two signs of inequality.